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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/058,050	01/29/2002	David R. Blythe	1026.00	3659

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STERNE, KESSLER, GOLDSTEIN & FOX PLLC
1100 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER	
LAY, MICHELLE K	

ART UNIT	PAPER NUMBER
2628	

DATE MAILED: 06/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/058,050	BLYTHE ET AL.	
	Examiner	Art Unit	
	Michelle K. Lay	2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 8-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5 and 8-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 3-1-06, 11-25-05
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03/01/2006 has been entered.

Response to Amendment

The amendment filed 03/01/2006 has been entered and made of record. Claims 1-5, and 8-21 are pending.

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Information Disclosure Statement

The information disclosure statement filed 11/25/2005 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because the references are geared towards a vehicle wheel device, which unrelated to minimizing the amount of data needed to test data against subarea boundaries in spatially composited digital video. It

has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims **1-5**, **8-21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Snyder et al. (6,326,964 B1).

In regards to claim **1**, Snyder teaches *a method for minimizing an amount of data needed to test a geometry chunk in a frame against subarea boundaries in a compositing window, comprising the steps of:* [*Abstract*]

- ***defining the geometry chunk with a bounding region, wherein said bounding region defines a space the geometry chunk occupies on the compositing window;***

Fig. 15C, pixel chunk (568), chunk boundary (554); compositing window (558).

- ***storing said bounding region for use in processing the geometry chunk in a subsequent frame;***

  Memory buffer [col. 10, lines 20-30].

- ***sending said bounding region to graphics pipelines;***

  The system of Snyder is a layered graphics-rendering pipeline [Abstract]. Although not explicitly taught, it is implicit that the chunk boundary (554) of Fig. 15C, is communicated through the system via the system interface (110) as shown in Fig. 1 where the geometry is presorted into bins based on which chunk the geometry will be rendered into [col. 10, lines 12-19].

- ***determining a graphics pipeline of said graphics pipelines that will render the geometry chunk defined by said bounding region;***

  The geometry is presorted into bins based on which chunk the geometry will be rendered into [col. 10, lines 12-19].

- ***assigning a subarea in the compositing window to receive an output of said graphics pipeline; and***

  Fig. 16B, example of coffee cup with saucer. System of Snyder treats the coffee cup (574) as a complex object comprised of simple parts (579-582), bounded by boxes (583-586) where each box (said assigned subarea) is rendered separated (said graphics pipeline) [col. 33, line 22 – col. 34, line 18].

- ***communicating the geometry chunk to said graphics pipeline that will render the geometry chunk.***

  The geometry is presorted into bins based on which chunk the geometry will be rendered into [col. 10, lines 12-19]. The image processor determines how the geometric primitives (e.g. polygons) should be divided among the chunks [col. 15, lines 31-33]. Although not explicitly taught, it is implicit that such information is communicated through the system via the system interface (110) as shown in Fig. 1.

In regards to claim **2**, the image processor determines how the geometric primitives (e.g. polygons) should be divided among the chunks [col. 15, lines 31-33].

In regards to claim **3**, Snyder teaches ***wherein said space is a screen space.***

The invention of Snyder transforms a bounding volume for an object to a 2D bounding box in a 2D view space [*Abstract*].

In regards to claim **4**, Snyder teaches ***wherein said space is a world space.***

The invention of Snyder supports 3-D graphics [col. 7, lines 56-57].

In regards to claim **5**, Snyder teaches ***wherein said space is an object space.***

The invention of Snyder transforms the bounding volume so that the number of chunks required to render the gsprite is minimized. Therefore, the space to

which the objects assigned to the gsprite is not necessarily the screen space but referred to the gsprite space [col. 15, lines 22-29].

In regards to claim **8**, Snyder teaches a display list that defines which gsprites (i.e. chunks) are to be displayed on the screen [col. 16, line 47 – col. 17, line 51].

In regards to claim **9**, Snyder teaches geometry processing where each primitive has a series of vertices. The vertex includes position information [col. 30, line 58]. Although Snyder does not explicitly teach such vertices as the vertices associated with the chunk, the chunk consists of the primitives associated with the vertices and therefore, implicitly, the geometry chunk is represented as a vertex array object. Additionally, the system of Snyder consists of a vertex input processor (384), vertex and control registers (386) which is used for edge detections of the triangle [col. 18, line 55 – col. 19, line 10].

In regards to claim **10**, Snyder teaches he image preprocessor determines how the geometric primitives (e.g. polygons) should be divided among the chunks by transforms the polygons to 2-D space (252) and determining which chunk or chunks the polygons project into. Due to the expense of clipping polygons, the preferred approach is to not clip the polygons lying at the edge of a chunk. Instead, a chunk includes polygons that overlap its edge. If a polygon extends over the border of two chunks, for example, in this approach the vertices of the polygon are included in each chunk. The image preprocessor then queues the chunk data for tiling. Tiling refers to

the process of determining pixel values such as color and alpha for pixel locations covered or partially covered by one or more polygons [col. 15, lines 30-44]. The tiler includes registers for six vertices to allow double buffering of the triangle processing [col. 19, lines 1-3].

In regards to claim **11**, claim 11 recites the same limitations as claim 1. Therefore, the same rationale used for claim 1 is applied. Furthermore, system of Snyder provides a graphics-rendering pipeline [*Abstract*]. The graphics support software (160) includes functions to support chunking and gsprite allocation (said ***geometry distributor***) [col. 12, lines 64 – col. 13, line 16]. The graphics support software (160) executes on the host computer system (130) and communicates with the image processing board (164) through the hardware abstraction layer (162) (said ***interface***) [col. 12, lines 57-63]. The image processor stores the compressed chunk in shared memory (262) [col. 15, lines 53-67].

In regards to claim **12**, the system of Snyder comprises a main memory (134) as illustrated in Fig. 2, that stores (134) programs comprising a series of instructions stored on a computer-readable medium [col. 11, lines 52-67]. As shown in Fig. 3, the block diagram illustrates the relationship between the software and hardware, where the image processing system is implemented using processing resources of the processor of the host computer and the image processing hardware [col. 12, lines 45-56].

In regards to claim **13**, as shown in Fig. 3 of the block diagram showing the relationship between hardware and software, the graphics support software (160) executes on the host computer system (130) and communicates with the image processing board (164) through the hardware abstraction layer (162) (said ***interface***) [col. 12, lines 57-63].

In regards to claim **14**, the graphics support software (160) includes functions to support chunking and gsprite allocation [col. 12, lines 64 – col. 13, line 16]. Therefore, although not explicitly taught, it is implicitly that this information provided from the graphics software is then communicated to the image processing board (164) via the hardware abstraction layer (162).

In regards to claim **15**, claim 15 recites the same limitations as claim 3. Therefore, the same rationale used for claim 3 is applied.

In regards to claim **16**, claim 16 recites the same limitations as claim 4. Therefore, the same rationale used for claim 4 is applied.

In regards to claim **17**, claim 17 recites the same limitations as claim 5. Therefore, the same rationale used for claim 5 is applied.

In regards to claim **18**, Snyder does not explicitly disclose a bounding region calculator, however, the graphics support software (160) includes functions to support chunking

and gsprite allocation, which therefore determines the bounding region for the geometry chunk [col. 12, lines 64 – col. 13, line 16]. Additionally, the system of Snyder presorts the geometry into bins based on which chunk the geometry will be rendered into [col. 10, lines 10-20], where each bin is the pipeline.

In regards to claim **19**, claim 19 recites the same limitations as claim 8. Therefore, the same rationale used for claim 8 is applied.

In regards to claim **20**, claim 20 recites the same limitations as claim 9. Therefore, the same rationale used for claim 9 is applied.

In regards to claim **21**, claim 21 recites the same limitations as claim 10. Therefore, the same rationale used for claim 10 is applied.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michelle K. Lay whose telephone number is (571) 272-7661. The examiner can normally be reached on Monday through Thursday from 7:30am to 5:00pm. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee M. Tung, can be reached at (571) 272-7794. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michelle K. Lay
Patent Examiner
Division 2628
06.07.2006 mkl

PATENT EXAMINER

Kee M. Tung
Primary Examiner